REMARKS

Claims 1-31 are pending in the application. The Examiner objects to the specification for failing to provide proper antecedent basis for the subject matter of claims 1 and 2. The Examiner rejects claims 1 and 2 under 35 U.S.C. § 112, first paragraph. The Examiner rejects claims 1-2, 6-13, 15, 19-22, 24-27, and 30 under 35 U.S.C. § 102(e) and rejects claims 3-5, 14, 17-18, 23, 28-29, and 31 under 35 U.S.C. § 103(a). Applicants amend claims 1, 3, 14, and 19, cancels claim 2, and adds claims 36-40. Claims 1-40 remain active in the application. Applicant adds no new matter and requests reconsideration.

Specification Objection and Claim Rejection under 35 U.S.C. § 112

Applicant cancels claim 2 to obviate the Examiner's specification objection and claim rejection.

Claim Rejections – 35 U.S.C. § 102

The Examiner rejects claims 1-2, 6-13, 15, 19-22, 24-27, and 30 under 35 U.S.C. § 102(e) as being anticipated by Nenonen U.S. Patent No. 6,148,103, ("Nenonen"). Applicant respectfully traverses the Examiner's rejection

Claim 1 recites *setting a first pixel level threshold for an input video frame in a video sequence, the input video frame including a plurality of pixels having corresponding pixel values within a pixel value range, where the first pixel level threshold is set to one of the pixel values within the pixel value range.* Claim 19 recites similar limitations.

Applicant amends claims 1 and 19 to clarify that the recited first pixel level threshold *is set to one of the pixel values within the pixel value range.* The amendment is supported by the specification, see, e.g., pages 8 and 9, and Figures 5 and 6. The Examiner alleges Nenonen's maximum amplification limit discloses the recited first pixel level threshold. The maximum amplification limit, however, is set according to a frequency of luminance value occurrences within an input picture, not to *one of the pixel values* as the claim requires. Nenonen, col. 4, line 57 – col. 5, line 38; Figure 4. This distinction may be best illustrated in a histogram comparison. For instance, Nenonen's histogram in Figure 4 shows its maximum amplification limit as a substantially horizontal line constraining the vertical peaks of the histogram, while the present application's histograms H(x) in Figures 5 and 6 show thresholds T, T_L, and T_U as vertical lines set to corresponding pixel values within the pixel value range 0–L-1. Since Nenonen's maximum amplification limit is not set to a *pixel value*

within the pixel value range, Nenonen does not anticipate claim 1, or claim 19, and their corresponding dependent claims.

Claim 1 further recites *when a given input-video-frame pixel's value is below the pixel level threshold, remapping that pixel according to an adaptive contrast-enhancing function* and *when the given input-video-frame pixel's value is above the pixel level threshold, remapping that pixel according to a scene-stable mapping function*. Claim 19 recites similar limitations.

The Examiner appears to allege Nenonen's conversion of input pixels into target pixels using a conventional non-linear mapping function discloses the recited remappings. Nenonen, col. 1, lines 27-35; col. 3, line 66 – col. 4, line 8; col. 6, lines 62-67. Nenonen, however, does not teach or suggest remapping pixels from an input video frame according to *two different functions*, much less with the recited contrast-enhancing and scene-stable mapping functions. Furthermore, there is no disclosure in Nenonen of remapping pixels according to their *pixel value* in relation to the recited pixel level threshold. Accordingly, Nenonen does not anticipate claim 1, or claim 19, and their corresponding dependent claims.

Claim 21 recites *a contrast-enhancing function generator capable of ...generating a remapping function for input pixel levels below the threshold based on the target histogram specification and the set of histogram bins* and *a scene-stable mapper to control the remapping function for input pixel levels above the threshold.*

The Examiner appears to argue Formation of Mapping Function 16 discloses the recited contrast-enhancing function generator and scene-stable mapper. There is no disclosure in Nenonen, however, of Formation of Mapping Function 16 generating or controlling a remapping function based on pixel levels in relation a threshold pixel level. Formation of Mapping Function 16 further generates its mapping function based on a preprocessed and filtered histogram, not the recited *target histogram* and the *histogram bins* as the claim requires. Nenonen, therefore, does not anticipate claim 21 and its corresponding dependent claims.

Claim Rejections – 35 U.S.C. § 103

The Examiner rejects claims 3-5, 14, 17-18, 23, 28-29, and 31 under 35 U.S.C. § 103(a) as being unpatentable over Nenonen in view of Fujimura et al., U.S. Patent No. 5,808,697, ("Fujimura").

The Examiner took "official notice" of the subject matter in claims 4 and 28. Claim 4 recites "setting a threshold that places a selected percentage of the input video frame's pixels

below the threshold." Claim 28 recites "a threshold calculator to calculate the set threshold to correspond to a selected percentage of the pixels represented in the histogram bins."

Applicant respectfully traverses Examiner's "official notice" that it is notoriously well known in the art to *set a threshold that places a selected percentage of the input video frame's pixels below the threshold.* Applicant agrees with the Examiner that neither Nenonen nor Fugimura disclose the recited limitations. Office Action, 2/22/2005, page 7. The Examiner further has not provided any reference that teaches or suggests setting a threshold to a pixel value within the pixel value range, much less setting the threshold according to a percentage of pixels with pixel values below the threshold. Applicant respectfully requests the Examiner produce authority for the "official notice" or withdraw the rejection.

New Claims

Applicant adds claims 36-40. The additional claims are supported by the specification and the accompanying figures, see, e.g., pages 8 and 9, and Figures 5 and 6. Added claim 36 recites *setting a pixel level threshold ... independently of the number of occurrences of the pixel values within the input video frame.* Since Nenonen's maximum amplification limit is set to an allowable upper limit of the *number of occurrences of the pixel values*, added claim 36 is novel and unobvious. Nothing in Fugimura cures this deficiency. Added claims 37-40 are novel and unobvious, as Nenonen and Fugimura do not disclose contrast enhancing pixels from some pixel value subranges of an input video frame and not other pixel value subranges.

///
///
///
///
///
///
///
///
///
///
///

CONCLUSION

For the foregoing reasons, reconsideration and allowance of claims 1-40 of the application as amended is solicited. The Examiner is encouraged to telephone the undersigned at (503) 222-3613 if it appears that an interview would be helpful in advancing the case.

Respectfully submitted,

Stephen S. Ford
Reg. No. 35,139

MARGER JOHNSON & McCOLLOM, P.C.
1030 SW Morrison Street
Portland, OR 97205
503-222-3613
Customer No. 20575

I hereby certify that this correspondence is being transmitted to the U.S. Patent and Trademark Office via facsimile number 1-703-872-9306, on May 22, 2005.

JENNIFER ABERNATHY